RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.

Application Serial Number: _09/490,064_

Source: _1600_

Date Processed by STIC: _03-17-2005_

ENTERED

1600

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/490,064

DATE: 03/17/2005
TIME: 12:08:53

Input Set : N:\Crf3\RULE60\09490064.raw.txt
Output Set: N:\CRF4\03172005\I490064.raw

SEQUENCE LISTING

```
   3  (1) GENERAL INFORMATION:
   5       (i) APPLICANT: Knappik, Achim
   6                     Pack, Peter
   7                     Ilag, Vic
   8                     Ge, Liming
   9                     Moroney, Simon
  10                     Plueckthun, Andreas
  13      (ii) TITLE OF INVENTION: Protein/(Poly)peptide libraries
  15     (iii) NUMBER OF SEQUENCES: 373
  17      (iv) CORRESPONDENCE ADDRESS:
  18           (A) ADDRESSEE: James F. Haley, Jr., Esq. c/o Fish & Neave
  19           (B) STREET: 1251 Avenue of the Americas
  20           (C) CITY: New York
  21           (D) STATE: New York
  22           (E) COUNTRY: USA
  23           (F) ZIP: 10021
  25       (v) COMPUTER READABLE FORM:
  26           (A) MEDIUM TYPE: Floppy disk
  27           (B) COMPUTER: IBM PC compatible
  28           (C) OPERATING SYSTEM: PC-DOS/MS-DOS
  29           (D) SOFTWARE: PatentIn Release #1.0, Version #1.30 (EPO)
  31      (vi) CURRENT APPLICATION DATA:
C--> 32          (A) APPLICATION NUMBER: US/09/490,064
C--> 33          (B) FILING DATE: 24-Jan-2000
  35     (vii) PRIOR APPLICATION DATA:
W--> 36          (A) APPLICATION NUMBER: US/09/025,769
  37              (B) FILING DATE: 18-FEB-1998
W--> 38          (A) APPLICATION NUMBER: EP 95 11 3021.0
  39              (B) FILING DATE: 18-AUG-1995
  41    (viii) ATTORNEY/AGENT INFORMATION:
  42           (A) NAME: James F. Haley, Jr., Esq.
  43           (B) REGISTRATION NUMBER: 27,794
  44           (C) REFERENCE/DOCKET NUMBER: MORPHO/5
  46      (ix) TELECOMMUNICATION INFORMATION:
  47           (A) TELEPHONE: (212)596-9000
  48           (B) TELEFAX: (212)596-9090
  50  (2) INFORMATION FOR SEQ ID NO: 1:
  52       (i) SEQUENCE CHARACTERISTICS:
  53           (A) LENGTH: 20 amino acids
  54           (B) TYPE: amino acid
  55           (C) STRANDEDNESS:
  56           (D) TOPOLOGY: linear
```

RAW SEQUENCE LISTING   DATE: 03/17/2005
PATENT APPLICATION: US/09/490,064   TIME: 12:08:53

Input Set : N:\Crf3\RULE60\09490064.raw.txt
Output Set: N:\CRF4\03172005\I490064.raw

```
58       (ii) MOLECULE TYPE: protein
63       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
65       Ala Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
66       1               5                  10                  15
68       Gly Gly Gly Ser
69                   20
71  (2) INFORMATION FOR SEQ ID NO: 2:
73       (i) SEQUENCE CHARACTERISTICS:
74           (A) LENGTH: 82 base pairs
75           (B) TYPE: nucleic acid
76           (C) STRANDEDNESS: single
77           (D) TOPOLOGY: linear
79       (ii) MOLECULE TYPE: other nucleic acid
80           (A) DESCRIPTION: /desc = "synthetic oligonucleotide"
85       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
87  TCAGCGGGTG GCGGTTCTGG CGGCGGTGGG AGCGGTGGCG GTGGTTCTGG CGGTGGTGGT        60
89  TCCGATATCG GTCCACGTAC GG                                               82
91  (2) INFORMATION FOR SEQ ID NO: 3:
93       (i) SEQUENCE CHARACTERISTICS:
94           (A) LENGTH: 83 base pairs
95           (B) TYPE: nucleic acid
96           (C) STRANDEDNESS: single
97           (D) TOPOLOGY: linear
99       (ii) MOLECULE TYPE: other nucleic acid
100          (A) DESCRIPTION: /desc = "synthetic oligonucleotide"
105      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
107 AATTCCGTAC GTGGACCGAT ATCGGAACCA CCACCGCCAG AACCACCGCC ACCGCTCCCA        60
109 CCGCCGCCAG AACCGCCACC CGC                                              83
111 (2) INFORMATION FOR SEQ ID NO: 4:
113      (i) SEQUENCE CHARACTERISTICS:
114          (A) LENGTH: 69 base pairs
115          (B) TYPE: nucleic acid
116          (C) STRANDEDNESS: single
117          (D) TOPOLOGY: linear
119      (ii) MOLECULE TYPE: other nucleic acid
120          (A) DESCRIPTION: /desc = "synthetic oligonucleotide
W--> 121                     library"
124      (ix) FEATURE:
125          (A) NAME/KEY: misc_feature
126          (B) LOCATION:28..45
127          (D) OTHER INFORMATION:/product= "6 random codons by
128 trinucleotide mutagenesis (19aa, no Cys)"
131      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
133 GATACGGCCG TGTATTATTG CGCGCGTNNK NNKNNKNNKN NKNNKGATTA TTGGGGCCAA        60
135 GGCACCCTG                                                             69
137 (2) INFORMATION FOR SEQ ID NO: 5:
139      (i) SEQUENCE CHARACTERISTICS:
140          (A) LENGTH: 84 base pairs
141          (B) TYPE: nucleic acid
```

RAW SEQUENCE LISTING   DATE: 03/17/2005
PATENT APPLICATION: US/09/490,064   TIME: 12:08:53

Input Set : N:\Crf3\RULE60\09490064.raw.txt
Output Set: N:\CRF4\03172005\I490064.raw

```
142              (C) STRANDEDNESS: single
143              (D) TOPOLOGY: linear
145          (ii) MOLECULE TYPE: other nucleic acid
146              (A) DESCRIPTION: /desc = "synthetic oligonucleotide
W--> 147                      library"
150          (ix) FEATURE:
151              (A) NAME/KEY: misc_feature
152              (B) LOCATION:28..57
153              (D) OTHER INFORMATION:/product= "10 random codons by
154 trinucleotide mutagenesis (19aa, no Cys)"
156          (ix) FEATURE:
157              (A) NAME/KEY: misc_feature
158              (B) LOCATION:58..60
159              (D) OTHER INFORMATION:/product= "random codon by
160 trinucleotide mutagenesis (TTT/ATG)"
162          (ix) FEATURE:
163              (A) NAME/KEY: misc_feature
164              (B) LOCATION:64..66
165              (D) OTHER INFORMATION:/product= "random codon by
166 trinucleotide mutagenesis (GTT/TAT)"
169          (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
171 GATACGGCCG TGTATTATTG CGCGCGTNNK NNKNNKNNKN NKNNKNNKNN KNNKNNKWTK        60
173 GATKWTTGGG GCCAAGGCAC CCTG                                             84
175 (2) INFORMATION FOR SEQ ID NO: 6:
177          (i) SEQUENCE CHARACTERISTICS:
178              (A) LENGTH: 21 base pairs
179              (B) TYPE: nucleic acid
180              (C) STRANDEDNESS: single
181              (D) TOPOLOGY: linear
183          (ii) MOLECULE TYPE: other nucleic acid
184              (A) DESCRIPTION: /desc = "synthetic oligonucleotide"
189          (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
191 GATACGGCCG TGTATTATTG C                                               21
193 (2) INFORMATION FOR SEQ ID NO: 7:
195          (i) SEQUENCE CHARACTERISTICS:
196              (A) LENGTH: 17 base pairs
197              (B) TYPE: nucleic acid
198              (C) STRANDEDNESS: single
199              (D) TOPOLOGY: linear
201          (ii) MOLECULE TYPE: other nucleic acid
202              (A) DESCRIPTION: /desc = "synthetic oligonucleotide"
207          (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
209 CAGGGTGCCT TGGCCCC                                                    17
211 (2) INFORMATION FOR SEQ ID NO: 8:
213          (i) SEQUENCE CHARACTERISTICS:
214              (A) LENGTH: 17 base pairs
215              (B) TYPE: nucleic acid
216              (C) STRANDEDNESS: single
217              (D) TOPOLOGY: linear
```

RAW SEQUENCE LISTING   DATE: 03/17/2005
PATENT APPLICATION: US/09/490,064   TIME: 12:08:53

Input Set : N:\Crf3\RULE60\09490064.raw.txt
Output Set: N:\CRF4\03172005\I490064.raw

```
219     (ii) MOLECULE TYPE: other nucleic acid
220          (A) DESCRIPTION: /desc = "synthetic oligonucleotide"
225     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
227 GCAGAAGGCG AACGTCC                                                   17
229 (2) INFORMATION FOR SEQ ID NO: 9:
231     (i) SEQUENCE CHARACTERISTICS:
232          (A) LENGTH: 80 base pairs
233          (B) TYPE: nucleic acid
234          (C) STRANDEDNESS: single
235          (D) TOPOLOGY: linear
237     (ii) MOLECULE TYPE: other nucleic acid
238          (A) DESCRIPTION: /desc = "synthetic oligonucleotide
W--> 239                           library"
242     (ix) FEATURE:
243          (A) NAME/KEY: misc_feature
244          (B) LOCATION:39..41
245          (D) OTHER INFORMATION:/product= "random codon (mixture of
246 GCT, CGT, CAT, TCT, TAT)"
248     (ix) FEATURE:
249          (A) NAME/KEY: misc_feature
250          (B) LOCATION:42..53
251          (D) OTHER INFORMATION:/product= "random codons by
252 trinucleotide mutagenesis (19 aa, no Cys)"
254     (ix) FEATURE:
255          (A) NAME/KEY: misc_feature
256          (B) LOCATION:57..59
257          (D) OTHER INFORMATION:/product= "random codon by
258 trinucleotide mutagenesis (19 aa, no Cys)"
261     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
263 TGGAAGCTGA AGACGTGGGC GTGTATTATT GCCAGCAGBV TNNKNNKNNK NNKCCGNNKT   60
265 TTGGCCAGGG TACGAAAGTT                                             80
267 (2) INFORMATION FOR SEQ ID NO: 10:
269     (i) SEQUENCE CHARACTERISTICS:
270          (A) LENGTH: 18 base pairs
271          (B) TYPE: nucleic acid
272          (C) STRANDEDNESS: single
273          (D) TOPOLOGY: linear
275     (ii) MOLECULE TYPE: other nucleic acid
276          (A) DESCRIPTION: /desc = "synthetic oligonucleotide"
281     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
283 AACTTTCGTA CCCTGGCC                                               18
285 (2) INFORMATION FOR SEQ ID NO: 11:
287     (i) SEQUENCE CHARACTERISTICS:
288          (A) LENGTH: 108 base pairs
289          (B) TYPE: nucleic acid
290          (C) STRANDEDNESS: single
291          (D) TOPOLOGY: linear
293     (ii) MOLECULE TYPE: other nucleic acid
294          (A) DESCRIPTION: /desc = "synthetic oligonucleotide
```

RAW SEQUENCE LISTING   DATE: 03/17/2005
PATENT APPLICATION: US/09/490,064   TIME: 12:08:53

Input Set : N:\Crf3\RULE60\09490064.raw.txt
Output Set: N:\CRF4\03172005\I490064.raw

```
W--> 295                        library"
     298     (ix) FEATURE:
     299          (A) NAME/KEY: misc_feature
     300          (B) LOCATION:21..23
     301          (D) OTHER INFORMATION:/product= "random codon by
     302 trinucleotide mutagenesis (19aa, no Cys)"
     304     (ix) FEATURE:
     305          (A) NAME/KEY: misc_feature
     306          (B) LOCATION:27..35
     307          (D) OTHER INFORMATION:/product= "random codons by
     308 trinucleotide mutagenesis (19 aa, no Cys)"
     310     (ix) FEATURE:
     311          (A) NAME/KEY: misc_feature
     312          (B) LOCATION:36..41
     313          (D) OTHER INFORMATION:/product= "random codons by mixed
     314 monomers (A/G A/C/G T)"
     316     (ix) FEATURE:
     317          (A) NAME/KEY: misc_feature
     318          (B) LOCATION:42..44
     319          (D) OTHER INFORMATION:/product= "random codon by
     320 trinucleotide mutagenesis (19aa, no Cys)"
     322     (ix) FEATURE:
     323          (A) NAME/KEY: misc_feature
     324          (B) LOCATION:48..50
     325          (D) OTHER INFORMATION:/product= "random codon by
     326 trinucleotide mutagenesis (19aa, no Cys)"
     329     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
     331 AGGGTCTCGA GTGGGTGAGC NNKATTNNKN NKNNKRVTRV TNNKACCNNK TATGCGGATA        60
     333 GCGTGAAAGG CCGTTTTACC ATTTCACGTG ATAATTCGAA AAACACCA                    108
     335 (2) INFORMATION FOR SEQ ID NO: 12:
     337     (i) SEQUENCE CHARACTERISTICS:
     338          (A) LENGTH: 105 base pairs
     339          (B) TYPE: nucleic acid
     340          (C) STRANDEDNESS: single
     341          (D) TOPOLOGY: linear
     343    (ii) MOLECULE TYPE: other nucleic acid
     344          (A) DESCRIPTION: /desc = "synthetic oligonucleotide
W--> 345                        library"
     348     (ix) FEATURE:
     349          (A) NAME/KEY: misc_feature
     350          (B) LOCATION:21..23
     351          (D) OTHER INFORMATION:/product= "random codon by
     352 trinucleotide mutagenesis (19aa, no Cys)"
     354     (ix) FEATURE:
     355          (A) NAME/KEY: misc_feature
     356          (B) LOCATION:27..32
     357          (D) OTHER INFORMATION:/product= "random codons by
     358 trinucleotide mutagenesis (19aa, no Cys)"
     360     (ix) FEATURE:
```

VERIFICATION SUMMARY DATE: 03/17/2005
PATENT APPLICATION: **US/09/490,064** TIME: 12:08:54

Input Set : **N:\Crf3\RULE60\09490064.raw.txt**
Output Set: **N:\CRF4\03172005\I490064.raw**

```
L:32 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:33 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:38 M:238 W: Alpha Fields not Ordered, Reordered [(A) APPLICATION NUMBER:] of (1)(vii)
L:1569 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:44
L:1573 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:44
L:1577 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:44
L:1581 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:44
L:1585 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:44
L:1589 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:44
L:1593 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:44
L:1656 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:46
L:1660 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:46
L:1664 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:46
L:1668 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:46
L:1672 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:46
L:1676 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:46
L:1680 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:46
L:1736 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:48
L:1740 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:48
L:1744 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:48
L:1748 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:48
L:1752 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:48
L:1756 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:48
L:1760 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:48
L:1764 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:48
L:1823 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:50
L:1827 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:50
L:1831 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:50
L:1835 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:50
L:1839 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:50
L:1843 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:50
L:1847 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:50
L:1903 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:52
L:1907 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:52
L:1911 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:52
L:1915 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:52
L:1919 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:52
L:1923 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:52
L:1927 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:52
L:1983 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:54
L:1987 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:54
L:1991 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:54
L:1995 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:54
L:1999 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:54
L:2003 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:54
L:2007 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:54
L:2063 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:56
L:2067 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:56
```

VERIFICATION SUMMARY
DATE: 03/17/2005
PATENT APPLICATION: US/09/490,064
TIME: 12:08:54

Input Set : N:\Crf3\RULE60\09490064.raw.txt
Output Set: N:\CRF4\03172005\I490064.raw

```
L:2071 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:56
L:2075 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:56
L:2079 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:56
L:2083 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:56
L:2087 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:56
L:2091 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:56
```